

## ABSTRACT

A semiconductor package includes a chip carrier to receive a semiconductor with a dimension generally greater than 22 mm. The chip carrier has a first coefficient of thermal expansion that is larger than the coefficient of thermal expansion of the semiconductor. A heat spreader having parallel channels on opposite sides is attached to the chip carrier along the channels. The heat spreader has a second coefficient of thermal expansion that is smaller than or equal to the coefficient of thermal expansion of the chip carrier. The interplay between the heat spreader and the chip carrier can effectively reduce package warpage and maintain coplanarity within the specification.